However, at this time 1/5 M. L. D. will cause a fatal toxemia. These results indicate that the binding or elimination of the injected castor oil soap is appreciable inside of the first 3 hours. The delayed injection of one M. L. D. of toxin shows that soap is still present in the animal body 72 hours after injection.

This is a preliminary report.

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## Effects of Water Content on Muscular Efficiency.

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Since little or no specific knowledge is to be had regarding water and the physiological activity of cells, it was thought desirable to investigate the relationship between the variation in total water content and muscular efficiency.

The gastrocnemii muscles of normal frogs were removed by the usual method. After weighing they were suspended in an ordinary muscle chamber. Contractions were obtained by stimulating with an electric current of known strength. All the muscles were forced to lift a known weight, thus leaving the variation in height of contractions as the criterion of efficiency. Readings were made at one-half to one-hour intervals, with the experiments extending from 3 to 6 hours.

The variation in water content was produced osmotically by using Ringer's solution of different concentrations. All the solutions were prepared from a known stock solution. The muscles were immersed in the solutions at all times except when contractions were being taken.

The right gastrocnemius in all cases served as a control and was submerged in normal Ringer's fluid, whereas the left gastrocnemius of the same frog served as the experimental muscle and was submerged in either hypotonic or hypertonic Ringer's solution of known concentrations. After the experiment was completed, the muscles were again re-weighed and the percentage variation in weight was determined. The degree of weight change was dependent upon the strength used and presumably is due to alteration of the water content of the cells.

Fifty-two different experiments were carried on using various

strengths of Ringer's solutions. After taking the average for the different groups of experiments, curves were plotted, showing the relationship between the weight alteration and the changes in muscular efficiency. It was found that muscle tissue was able to increase between seven and eight per cent in weight before efficiency fell below that of normal, whereas if a decrease in weight was present, efficiency was noted to fall below normal almost immediately.

This is a preliminary report.

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## Effect of Unilateral Nephrectomy Upon Number of Renal Corpuscles in Young Albino Rats.

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When one kidney is absent, the other undergoes the well-known compensatory hypertrophy. Most investigators agree that in cases of congenital defect the renal corpuscles (glomeruli) of the enlarged kidney appear to be increased in number (hyperplasia). In cases of postnatal, acquired renal defect, however, at least in adults, the renal corpuscles appear to be merely increased in size (hypertrophy) without increase in number. Even in young animals, the recent investigations of Arataki[1] (albino rat at 20 days) indicate no increase in the number of renal corpuscles after unilateral nephrectomy.

But these experiments were performed upon animals in which the normal formation of new renal corpuscles had almost or entirely ceased. Kittelson[2] has shown that in the rat the corpuscles have nearly reached the adult maximum number at three weeks of age. It seems possible that the removal of one kidney in the rat shortly after birth, when the new formation of corpuscles is still active, might produce a corpuscular hyperplasia, comparable to that found in cases of congenital absence of one kidney.

In order to test this possibility, the present study was undertaken. In a female albino rat one week old, body weight 9.09 gm., the right kidney was removed. It weighed 0.049 gm. Two weeks later the rat was killed at 21 days of age, body weight 24.4 gm. The left kidney weighed 0.214 gm., which is about 34 per cent above Donaldson's[3] norm for kidney weight (female) at corresponding body weight.